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ABSTRACT

This paper has been prepared to assist the United States Department of Labor to explore new approaches to evaluating and measuring the performance of employment and training activities for youth. As one of several tools for evaluating success of local youth training programs, "benchmarking" provides a system for measuring the development of those trained with Comprehensive Employment and Training Act (CETA) funds. The paper consists of five sections. Section 1 contains definitions and a discussion of the terms and concepts involved in any consideration of benchmarking. Section 2 provides a historical overview of the development of competency measures in the secondary education and vocational education systems, along with the Consolidated Youth Employment Program (CYEP) experience with benchmarking. In section 3, a number of issues that should be considered before a benchmarking system is designed are discussed, and the importance of developing benchmarks in conjunction with local employers is emphasized. Section 4 focuses on the problems that could be encountered in implementing a benchmarking system. The final section contains a brief listing of the qualities one would expect to find in an exemplary benchmarking system. (A large portion of the research on which this paper is based was generated as part of the "knowledge development" program of the recent youth experimental and demonstration efforts.) (KC)

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BENCHMARKING

Issues in the Design and Implementation of a Benchmarking System for Employment and Training Programs for Young People.

Submitted To

U.S. DEPARTMENT OF LABOR
Employment & Training Administration
Office of Youth Programs

CE 034 744

U.S. DEPARTMENT OF EDUCATION
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Prepared By

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November, 1981

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Foreword

This paper has been prepared to assist the United States Department of Labor to explore new approaches to evaluating and measuring the performance of employment and training activities for youth. The development of new or improved performance standards for youth programs is being conducted in much the same fashion as the recent work to develop performance standards for adult programs. The work is being undertaken cooperatively by the Employment and Training Administration's (ETA) Office of Youth Programs and Office of Performance Management.

In formulating standards for CETA youth programs, ETA is utilizing the expertise of a wide range of interested parties. In particular, the Department has asked two groups of people actively involved in the employment and training system to reflect on the needs of the system, the past and present evaluation practices for "youth" programs, and on their own personal experiences before making recommendations on performance measures for youth programs. An Advisory Committee (AC) makes policy recommendations and provides overall direction to the work, while a smaller Technical Work Group (TWG) drafts papers defining issues and approaches for Advisory Committee review and consideration. The TWG has day-to-day responsibility for the development of performance standards; the AC provides guidance to the TWG.

At present, these two groups consist of the following representatives:

Technical Work Group (TWG)	Advisory Committee (AC)
8 Prime Sponsor staff	15 Prime Sponsors (Directors or their Associates)
5 National Office (DOL) staff	5 National Office Administrators
2 Regional Office (DOL) staff	2 Regional Administrators
1 Local Educational Agency staff	5 Public Interest Groups
	1 Local Educational Agency Director
	1 National Education Administrator

A. L. Nellum and Associates has been asked to provide research and policy development assistance to the Work Group. As part of this assistance, in late September ETA asked ALNA to produce a short paper on benchmarking. As a reference for the TWG, this paper will summarize the readily-available benchmarking literature, and serve as a stepping-off point for future actions by ETA to promulgate and implement new performance standards requirements developed by the Work Group and Advisory Group.

ALNA staff has analyzed the literature recommended by members of the Work Group as well as other related documents available through the DOL Resource Centers, the Massachusetts Regional Vocational Education Curriculum Resource Center and our own files and resource materials. Included in this literature search were several products of the knowledge development effort conducted as part of the Youth Employment Demonstration Projects Act (YEDPA). Of particular assistance to us were Progress Toward Integrating Services for Youth, a series of quarterly reports prepared by the Technical Assistance and Training Corporation which evaluates the progress of the Consolidated Youth Employment Program (CYEP); and a three-volume report prepared by the Syracuse Research Corporation on Benchmarking: A State-of-the-Art Review. Although this search has not necessarily uncovered all of the relevant literature on benchmarking, it does include the major current documentation on benchmarking efforts in the employment and training system as well as a considerable portion of the recent educational literature on benchmarking.

Introduction

Benchmarking is an important concept for the employment and training system. Successful implementation of comprehensive benchmarking systems could help employment and training programs provide clients with more useful service, link training programs to local employers and more carefully manage the services provided. To date, only preliminary efforts have been made to implement benchmarking systems in the employment and training system. Although these efforts have not been entirely successful, they have provided us with a great deal of useful guidance for future efforts to develop benchmarking systems.

Section I of this paper contains definitions and a discussion of the terms and concepts involved in any consideration of benchmarking. In addition to explaining competency indicators, competency areas and benchmarks, this section explains how these can combine with an assessment system to form a comprehensive benchmarking system.

Section II provides an historical overview of the development of competency measures in the secondary education and vocational education systems. In addition, the CYEP experience with benchmarking is discussed. This experience provides us with considerable insight into how future efforts to construct benchmarking systems ought to be conducted.

In Section III, we discuss a number of issues which ought to be considered before designing a benchmarking system. This section stresses the need to carefully think about the conceptual framework for a benchmarking system before designing it. In addition, the importance of developing benchmarks in conjunction with local employers is emphasized.

Section IV focuses on the problems which could be encountered in actually implementing a benchmarking system. In this section we argue

that the implementation of benchmarking systems is truly beneficial only if sufficient time and resources are allocated to allow the system to function properly.

The Findings Section which concludes this report contains a brief listing of the qualities one would expect to find in an exemplary benchmarking system. The list is not all inclusive. Rather, it is an attempt to summarize the most prominent features.

A large portion of the research on which this report is based was generated as part of the "Knowledge Development" program of the recent youth experimental and demonstration efforts. Of particular assistance were the Syracuse Research Corporation series Benchmarking: A State-of-the-Art Review, and the Quarterly Progress Reports on the Consolidated Youth Employment Project which were prepared by the Technical Assistance and Training Corporation. We have also benefited from the wise counsel of many of the Youth Performance Standards Technical Work Group members, and from the support of the ETA Office of Youth Programs and Office of Performance Management.

Perhaps the most encouraging aspect of preparing this report was the positive feedback engendered during our discussions with those engaged in benchmarking efforts. Despite some initial difficulty in implementing benchmarking systems, there were CETA prime sponsors who have developed and implemented them successfully in their programs.

I. Defining the Concept

As one of several tools for evaluating the success of youth employment and training strategies at the local level, benchmarking provides an explicit and formal system for measuring and documenting the employability development of CETA participants. In a general context, CETA benchmarks can be defined as standards of performance or achievement which are perceived as necessary to obtain and retain unsubsidized employment.

"Benchmarks" is only one label that could be given to standards against which to measure participant progress. Some critics argue that the use of the term does little but confuse the intent[1], and that "benchmarks" is just a synonym for other terms which are more current and commonly understood—like performance standards, minimum competencies, achievement standards, measurable outcomes. But discussions with prime sponsors and program operators who have implemented benchmarking systems suggest that the term should be retained. In their report, Benchmarking: A State-of-the-Art Review, Syracuse Research Corporation provides a general argument for the unique use of the term:

> Benchmarks are not to be confused with performance standards as the CETA system currently knows them, nor with assessment as the system currently practices it. Nor are benchmarks exactly like minimum competencies in education circles, since they neither exclusively apply to basic educational competencies, nor would the "minimum competencies" for different participants in a benchmarking system necessarily be the same.[2]

CETA has used the benchmarking concept informally whenever a program operator, counselor, teacher, trainer, or work supervisor calls upon some standard against which to measure performance of a CETA participant. When prime sponsors require participants to have a high school

diploma or achieve a specific educational level, they have established a benchmark. When a worksite supervisor requires trainees to report to work on time or when a trainee's work attitude is evaluated according to some set of criteria, benchmarks have been applied. However, the development of those measures, the methods for assessing performance and the documentation of individual participant achievements, have in many cases resulted from informal processes and inconsistent application of procedures.[3] The current use of the benchmarking concept for youth employment and training programs is innovative in that it recognizes the need to move from implicit and informal formulation and use to explicit and formal statement and application.

Benchmarking, in an employment and training context, is a process for linking the demands of the local job market with the employability development needs of CETA participants. Benchmarking indicates how and to what extent those needs can be met through the provision of CETA services or a combination of CETA and non-CETA services. CETA benchmarks for youth programs could be defined as performance standards that indicate the levels of ability and knowledge which a youth needs to attain in order to compete in the local labor market. Achieving benchmarks could thus indicate a youth's ability to succeed in a job.

Although the term "benchmarking" refers to a single process, i.e., the measurement of performance according to some set of standards, a benchmarking system is actually comprised of four related elements. An example of this relationship is contained in Figure 1:

Figure 1

Competency Area	Competency Indicator	Benchmark	Assessment
Work Maturity →	Participant will demonstrate good attendance... →	by showing up on time nine days out of ten on a work-experience placement... →	as measured by employer attendance reports.

A. Competency Areas

Employment and training competency areas can be defined as knowledge or skill areas that are perceived as necessary for an individual to obtain a job. Competency areas define general behaviors that participants are expected to demonstrate. They result from the question, "What skills, knowledge and attitudes can we identify, through prior experience with CETA youth programs, to be most relevant and important to a youth's ability to compete in the labor market?"

In determining appropriate needs for youth employability development, competencies should refer to more than occupational skills or qualifications to obtain a job. Surveys of employer expectations of job applicants indicate interest in individuals who can demonstrate competence in such areas as work attitude, punctuality, ability to follow instructions, as well as demonstrated levels of competency in reading and math.[4] Section II C of this paper will discuss the kinds of information acquired through youth knowledge development activities (specifically VEDP and CYEP) that allow us to make certain informed

statements about youth employability development needs. Based on this information, it seems that appropriate competency areas for youth would include work maturity, educational, occupational, and pre-employment skills. These competency areas will be discussed in detail later in this paper.

B. Competency Indicators

Competency indicators reflect the development of a competency in an applied context. While competency areas identify general behaviors and areas of skill or knowledge, competency indicators break each of those areas into activities (e.g., written tests, mechanical tests, performance on the job, etc.) which measure an individual's proficiency in performing a specific task. Competency indicators result from the question, "What behaviors will indicate that a youth has attained competency in a given area?"

C. Benchmarks

Benchmarks are closely related to competency indicators. While the latter refers to levels of skills or knowledge to be demonstrated, benchmarks refer to performance standards at which a particular individual is expected to demonstrate competency. Benchmarks are established at the local level on the basis of local needs and capabilities to meet those needs. Specific employment and training needs may vary with each prime sponsor, depending upon such variables as local labor market conditions, the needs of the service population and the size and available resources of the prime sponsor delivery system. Benchmarks should reflect prime sponsor reality—"Are we asking participants to demonstrate skills, knowledge and attitudes that will get them a job and can we

provide sufficient services to assist in achieving those competencies?" In addition, since a given benchmark is not necessarily equally relevant to all people, nor does everyone independently establish the same benchmarks in their lifetime, benchmarks should be established at several proficiency levels that reflect key steps to attaining entry-level job requirements.

D. Assessment

Competency-building and benchmarking rely heavily on the assessment process to determine each youth's progress in attaining appropriate employability skills. The assessment process should determine each youth's strengths and weaknesses relative to basic competencies and the capability of the program to meet individual needs. Factors that should be addressed during assessment include a youth's interests and aptitudes, current abilities and previous educational and work experiences as well as the additional skills needed to compete successfully in the labor market. Major elements of an assessment process include the following:

1. measuring the youth's initial level of employability development in order to determine present levels of competency,

2. providing a rationale for and identifying tentative long-range employability development goals and competency objectives for each youth,

3. selecting the mix of services in which youth will participate in order to achieve the stated competency objectives,

4. measuring each youth's gains in competency areas and progress towards employability development.

The assessment process should occur periodically, perhaps every quarter, or ideally upon completion of each unit of service. A youth's progress throughout the CETA program can be measured in various ways: (1) standardized tests for math and reading levels, (2) employer and worksite supervisor evaluations, (3) mechanical aptitude tests, (4) exercises that indicate understanding of specific skills, or (5) records of completion of a specified activity, like an attendance report. Reassessment involves feedback to the youth and leads to revision of a youth's individual goals and designation of services. The outcomes of these various types of assessment are documented in the client's Employability Development Plan (EDP).

In summary, the basic elements of a benchmarking system can be defined in the following manner:

1. Competency Areas (educational, occupational skills or other areas of measurable behavior) which are perceived as important work-related knowledge that must be acquired if youth are to move successfully into the labor market;

2. Competency Indicators which are specific behaviors within a competency area which define the level of proficiency which a participant has obtained;

3. Benchmarks which are measurements of the level of competency attained by an individual participant in a specific competency area; and

4. Assessment and Reassessment which are processes for determining an individual's progress in achieving basic competency levels.

II. The Development of Competency Measures in the Educational and CETA Systems

In this section, we will briefly trace the development of competency measures and benchmarking systems in the educational and CETA systems. The "mainstream" education system has been engaged in benchmarking-type activities for much longer than the CETA system. The processes involved and systems used by the education system can provide useful models for the CETA system as it reviews past benchmarking efforts in employment and training demonstrations like CYEP and VEDP and considers continuation of the benchmarking efforts for CETA youth activities.

A. The Education System

Most of the early efforts at mass education in the United States focused on providing basic skills in reading, writing and mathematics. As the affluence of the general population increased, people demanded more sophisticated educational programs from the public schools. In a sense, the goal of the public education system changed over time from merely producing individuals who possessed minimal literacy skills to developing a more "well-rounded" graduate. This well-rounded graduate possessed skills in the "three R's" as well as some knowledge of civics, history, geography, science, music, theatre, athletics, and the like.

For reasons beyond the scope of this paper, some critics have argued that this move past the earlier focus on the "three R's" has had a detrimental effect on the quality of the basic education offered to public school students. While attempting to produce students who were more broadly educated in the arts and sciences, critics argued that public schools were turning out students who couldn't read, write or solve simple problems in math. These criticisms have, in many cases, arisen at the same time as

criticisms that the public schools were too costly to run; that they were producing students without sufficient skills to successfully fill available jobs; that secondary schools were sending off to colleges and universities students who require a first-year program of remedial education; and that school systems across the country vary too widely in educational quality.

In response to these criticisms, many school systems have renewed the emphasis on basic skills and developed (or are in the process of developing) standardized, objective measures of "competence" to be applied to potential grade completers and graduates. It is not uncommon for local school districts to have competency-based approaches both for promoting students from one grade level to another and as a criterion for graduation.

In a recent article in Phi Delta Kappan, a journal of higher education, the minimum competency-testing approach was defined in terms of three general characteristics:[5]

1. All or most students of designated grades take paper-and-pencil tests to measure basic academic skills, life or survival skills, or functional literacy;

2. A passing score or standard for acceptable levels of student performance is established; and

3. Test results may be used to certify students for grade promotion, graduation, or diploma award; to classify students for or to place students in remedial or other special services; to allocate compensatory funds to districts; to evaluate or to certify schools or school districts; or to evaluate teachers.

W. James Popham, in another Phi Delta Kappan article, suggested seven identifiable features to characterize a "high quality" minimum competency testing program.[6]

1. Constituency-Selected Competencies - All concerned constituencies are included in selecting competencies for testing. Those included in this process would be school boards, administrators, teachers and employers.

2. Appropriate Competency Tests - The tests are carefully constructed criterion-referenced instruments accompanied by clear descriptions of the competencies they measured. The term "criterion-reference" refers to some indicator of performance that can be measured on the job or in a training situation (measurable behaviors).

3. Teaching/Testing Congruence - The instructional program directly teaches the competencies measured by the tests.

4. Multiple Testing Opportunities - Students receive several opportunities to pass the competency tests. An early warning system detects students who need special help. Students who fail the test receive remedial instruction.

5. Adequate Phase-in Time - Students receive sufficient warning (perhaps several years) before they have to demonstrate proficiency on competency tests.

6. Sensible Setting of Standards - A systematic and, preferably, research-derived effort to set minimally acceptable scores for passing the tests is established. The standard-setting process is methodical and open to all concerned constituencies, especially minorities.

7. Coordinated Staff Development - When the program is established, staff development activities help teachers and administrators to focus on strategies for student mastery of the targeted competencies.

It can be argued that the focus of most secondary schools is to teach students "how" to do a few tasks (e.g., read a newspaper, write a letter and add the columns on their IRS Form 1040). In addition, secondary school curricula are often designed to teach students "about" the plays of Shakespeare, the discoveries of Marie Curie and the music of Beethoven. Students learn about literature, physics and music, but not necessarily "how" to write plays, study molecular functions or compose symphonies.

In vocational-technical schools, however, the overall goal is not only to teach students math, reading and writing, but to help them apply that knowledge and acquire specific functional skills which will enable them to perform on the job. For this reason, it is also appropriate to devote some attention to the competency measurement efforts of the vocational education system. In some respects, the vocational education system is more like the

employment and training system than the "mainstream" secondary education system.

B. The Vocational Education System

Vocational educators have been benchmarking vocational skills for years although specific practices vary among localities. Many local programs have elaborate systems of advisory councils for the vocational areas in which they teach. The function of these councils varies, but the active ones often review and approve course curricula and even staff qualifications and equipment. Some states have tightly structured vocational education programs with statewide standards. Many programs integrate instruction in basic skills (e.g., science, math, reading comprehension) with vocational instruction.

As Appendix 1 shows, vocational education makes up a significant part of the American educational system—the skills imparted at voc-tech schools are more closely and directly related to relatively clearly defined professions, jobs and employer needs than those at most general secondary schools. Writing in the American Vocational Journal, Ben Hirst, Jr. defined competency-based vocational education as "a systematic approach to instruction aimed at accountability, based on job-derived standards, and supported by a feedback mechanism."[7]

Our research uncovered several descriptions of ideal processes which should be used to develop competency measures and benchmarks in the vocational education system. These processes and procedures can serve as models for the employment and training system in its efforts to develop benchmarks and competency measures.

Although two of these systems are described in Appendix 1, it is appropriate to consider their common and essential elements here:

1. The basis for selecting the jobs for which training is to be provided and benchmarks developed is the demand for workers. Training should only be provided in occupations which indicate high demand for workers.

2. Jobs selected for curriculum development are analyzed to reveal the skills required, tasks performed and tools used. Initial research efforts should be validated by interviews with people currently filling the jobs.

3. All competency measures and tests are validated and carefully monitored during their initial implementation.

4. Competency measures and testing procedures are implemented gradually and with input from the relevant constituency groups. Adequate time is allowed for staff training before final implementation.

5. Regular efforts are made to review the competency measures and tests used. If appropriate, new measures, testing procedures or training curricula are developed.

The development of competency-based programs was a long-term project of vocational-technical education, and there are a number of institutional manifestations of this relatively long-range interest in competency-based vocational education. Among these are the National Center for Vocational Education at Ohio State University and V-TECS (Vocational-Technical Education Consortium of States), a consortium of 17 states and several branches of the military. The National Center serves as a dissemination center for collecting and exchanging curriculum materials and practices for vocational educators. V-TECS has produced catalogs of performance objectives (or competency indicators) and performance guides on specific jobs for use in the development of vocational-technical curricula. Appendix II lists the jobs studied by V-TECS and provides examples of task-specific performance guides.

C. The Development of Competency Standards and Benchmarks in the CETA System

Implementation of most of the early programs funded by the Comprehensive Employment and Training Act was a somewhat hurried undertaking which

in most cases was not characterized by adequate long-range planning. The initial concerns of early program operators were: (1) to establish appropriate job training and job development strategies, (2) to implement operational systems to support these activities, and (3) to insure some measure of accountability from service contractors.

In a sense, the CETA system developed much like the education system. In early stages it provided basic services and training, and in later years more comprehensive and imaginative services were developed. As the employment and training system matured, early concerns with "start up" of programs were replaced by a desire to increase the efficiency and effectiveness of the programs funded under the Act. In later years, this trend was stimulated by criticism from those in the system and from outside the system.

The critics of the early CETA system voiced many concerns, including those regarding the cost of providing the employment and training services and the ability of the system to produce graduates with useful skills. In an attempt to more efficiently and effectively provide needed services, program operators and program administrators adapted several management techniques not previously used in the CETA system. One of the more interesting techniques introduced was benchmarking.

Benchmarking in CETA youth programs has generally been conducted through various demonstrations. These programs include the Consolidated Youth Employment Program (CYEP); the Vocational Exploration Demonstration Project (VEDP); the Career Passport Project; the Skill Center Advanced Training and Employment Program (SCATE); and the Hartford Private Sector Employment Assistance Corporation (PSEAC).[8] The experiences of CYEP, and to a lesser extent VEDP, were particularly helpful in the development of the OYP benchmarking paper. The following sections offer a summary of those two demonstrations.

1. The Vocational Exploration Demonstration Project (VEDP)

VEDP was a discretionary funded youth program designed to accomplish several goals: (1) to examine in a variety of program models the relationships among program participants, program activities and services, impacts, and environmental factors; (2) to compare summer and non-summer vocational exploration efforts; (3) to compare a vocational exploration experience over a twelve-month period with similar activities and services offered for shorter periods of time; and (4) to investigate the effects of vocational exploration programs upon the attitudes and institutional behavior of business and organized labor.

The program was implemented in the summer of 1979 and ran through the 1979-80 academic year. Summer, 1980, extensions operated in three of sixteen sites. Thirteen sites ran a separate summer, 1980, component; five of these also had a control group. This special demonstration project analyzed various vocational exploration program designs to determine what worked for whom, when, where, why and how. In a series of evaluation reports prepared by the St. Louis University Center for Urban Programs, the purpose of VEDP was described as one of assessing participants in the development of cognitive skills such as increased knowledge about the world of work and its range of careers; affective skills, such as better understanding of and adherence to the generally prevalent code of job behavior, and improved self-concept and interpersonal relations skills; and transition skills, such as moving from the program to an unsubsidized job or other opportunity that helps in the participant's employability development.[9] Adjunct services are also provided, such as counseling, supportive services, educational enrichment, job development and assistance in securing post-program opportunities, and coping skills.

Vocational exploration was not seen as an end in itself, but rather as a "stepping stone" activity. Participation in a vocational exploration program involved the enrollee in a transitional process of growth and decision-making which was directed toward fostering in participants the appropriate attitudes, understanding, and appreciation of what is needed to successfully move from school to work and compete in the job market.

Benchmarks for this program were established by a national task force. These benchmarks were related to one of four areas: (1) knowledge about kinds of work; (2) knowledge about the culture of work; (3) knowledge about and the skills for finding a job; and (4) knowledge and skills for surviving in the work world. Youth enrolled in vocational exploration activities, and upon completion of the activites were tested for achievement of the benchmarks. These benchmarks were selected on the basis of several criteria:

1. Each benchmark had to be directly related to at least one of the mandated objectives of vocational exploration;

2. Each benchmark had to be expressed in behavioral terms to enhance the objectivity of the assessment system and to maintain the direct linkage of the benchmark to the program objectives; and

3. Benchmarks had to emphasize behavior that demonstrates knowledge application rather than simply knowledge acquisition.

2. The Consolidated Youth Employment Program (CYEP)

CYEP demonstration projects operated during FY '80 in eight sites and in FY '81 at an additional five sites. CYEP attempted to test the feasibility of consolidating categorical youth programs (SYEP, YETP and YCCIP) into one, and providing truly individualized assessment and service delivery to youth participants. Demonstration projects were designed to create a more flexible mechanism for delivering youth services to eligible participants. In designing the Consolidated Youth Employment Programs, the Department of Labor required CYEP prime sponsors to create benchmarking systems which incorporated employer-

validated performance standards (benchmarks) for assessing individual participant achievements. Those benchmarking efforts were intended to enhance the credibility of CETA participant achievements with local employers. The CYEP benchmarking systems design was based on five major premises:[10]

1. Special intervention is needed to facilitate the successful transition of low-income youth to the adult labor market especially youth who are minority group members, single parents or school dropouts.

2. The needs of each eligible youth must be individually assessed to determine present interests, aptitudes, abilities and personal circumstances.

3. An employability development service intervention strategy must be developed for each youth based on assessment results and the range of service options available.

4. Gains in participants' abilities must be periodically measured and documented using a set of locally established benchmarks for employability development which are relevant to the needs of the private sector.

5. The program should be managed, based on specific levels of program performance to be attained, the degree to which youth are achieving individual gains, and by means of systems providing the information required to assess participant performance.

a. The Assessment Process and EPR

CYEP was intended to improve the effectiveness of employment and training services to youth by focusing on the assessment of the employability development needs of each participant and providing an individualized service intervention strategy documented in each youth's Employability Plan and Record (EPR). In the early CYEP days, most prime sponsors maintained an EPR and a Service Agreement for each participant. The EPR was meant to be a long-term career development plan which reflected the aptitudes, talents and skills of each participant. The Service Agreement was intended to be maintained as formal documentation of the specific services to be provided to a participant and an agreement with a particular service agency to deliver those services. Designation of appropriate

services to be received by a client depended on the employability goals and benchmarks identified in the EPR.

According to the series of Quarterly Reports prepared by the Technical Assistance and Training Corporation (TATC), the early efforts at implementing CYEP benchmarking systems were characterized by several deficiencies;

1. Most prime sponsor staff felt that the EPR meant more paperwork with no corresponding positive benefits to the program or to participants.

2. At some CYEP sites, prime sponsors had the responsibility for preparing and maintaining EPRs. At some sites, both functions were delegated to subrecipients. To the extent that complete files were not maintained in a single location, using the EPR as a tool for planning was a cumbersome process.

3. At most sites, it appeared that EPRs, like the Employability Development Plans (EDPs) which they replaced, encouraged an approach to employability development in which:

   a. Only one unit of service at a time was planned;
   b. Planning was restricted to what is provided by CYEP;
   c. Assessment, goals and activities were not explicitly linked;
   d. Employability development was only loosely tied to performance standards, certification or credentialling.

TATC found that EPRs were used to identify a participant's long-range goals, but few prime sponsors ventured beyond that point to explicitly define short-term objectives, performance benchmarks, etc. Referral to a unit of service too often reflected the availability of a "slot" rather than a careful matching of the participant's present level of competency and interest. In theory, the EPR was intended to allow prime sponsor staff the opportunity to track client progress, necessitating frequent or at least regularly scheduled meetings with the individual client in order to review progress and refine service needs.

Some improvement in using EPRs and benchmarking concepts was noted in later quarterly reports. However, the fourth quarterly report prepared by TATC noted that in a sample of participant records drawn from all of the CYEP sites, a planned service strategy was documented in only 7.1 percent of the EPRs sampled. At the time of the sample, only 18.7 percent (74) of those sampled had completed their initial activity, 13.4 percent (53) did not complete and 4.8 percent (19) were no longer enrolled.

Among the EPRs with sufficient data to compare participant goals and units of service provided, the goals and the units of service provided were consistent in 29.9 percent of the cases. However, TATC observed that it was not always clear whether the units of service planned were a reflection of the youth's goals or whether the goals recorded were a reflection of the unit of service planned. At some sites, consistency appears to be a function of standardization and is accompanied by a loss of individualized planning in which the youth's own interests play a major role.[11]

TATC's evaluation of CYEP through the first quarter of FY '81 noted that the individualized planning and comprehensive assessment of client services was most easily accomplished by a centralized system of intake and assessment. Those prime sponsors who operated a centralized system were able to maintain adequate control over the quality and efficiency of the assessment process, resulting in more accurate indications of client needs and matching of appropriate services to meet those needs. For most prime sponsors, however, assessment appears to have been concentrated at client entry with only sporadic use of this information to make decisions about what services a client should receive.

b. Developing the Benchmarking System

The CYEP benchmarking process involved (1) developing competency benchmarks and benchmarking procedures; (2) measuring individual gains in competency throughout a youth's participation; and (3) documenting achievements and awarding

credentials. Benchmarks were intended to reflect measurable competency levels (competency indicators) in each of four identified areas of employability development; i.e., educational skills, pre-employment, work maturity and occupational skills, that are generally prerequisites for successful entry to the local labor market. Benchmarks were to be established at a number of proficiency levels to reflect the key steps to the attainment of entry-hiring requirements of local employers.

CYEP projects experienced several problems in this development process. One particular difficulty involved the use of planning task forces to develop a benchmarking system. Task force members tended to view this task as secondary to their regular responsibilities. As a result, task force meetings were difficult to schedule and members rarely had assignments to complete between meetings. TATC noted that assigning benchmark development to a single staff person with clear responsibility for their development within a specified time period might have been a more efficient approach. Another problem involved the initial conceptualization of four benchmarking competency areas. Pre-employment and work maturity descriptions contained common elements. Beyond basic educational competencies, educational attainment was also closely related to occupational or occupational cluster skill requirements. Because of this confusion, none of the original eight demonstration sites were able to design benchmarks for more than two of the four competency areas. At all but five sites, individual benchmarks were ill-defined or ambiguous. Many benchmarks were vague and included simple and unelaborated completion measures such as "complete a specific unit of service, obtain relevant diploma or achieve satisfactory attendance levels."

Loosely defined and inconsistent benchmarks within a competency area made it difficult for sites to assess participant strengths and weaknesses

in relation to benchmarks. In some cases checklists or other formats were used by counselors which identified acceptable standards in individual competency areas, but the scores to be achieved in order to move on to another area of competency were sometimes too ambitious and participants ended up being channeled into a predictable and similar sequence of service.

Measuring the gains in competency acquisition was an informal process due in large part to the lack of clearly defined benchmarks. Because they were unable to pinpoint measures for benchmarks, sites had difficulty in developing methods to measure participant gains. The lack of well-defined competency indicators also constrained the developmental process both in terms of providing a particularly full range of assessment services, and in reassessment of individual progress in skill acquisition. Local definitions for each of the four competency areas were established at all but two of the CYEP demonstration sites. Some sites were able to break down and define the elements of these competency areas; unfortunately, only two sites were able to set benchmarks. The relationship of units of service to each competency area was also unclear. Several sponsors established a single benchmark in each competency area with no interim levels, other than completion of units of service to indicate progress of youth towards employability.

D. Perceptions of and Support for Benchmarking

According to the Syracuse Research study of benchmarking practitioners, there are three general categories of reaction to the benchmarking concept: those who disagree with the concept; those who think the concept is good but that is is unworkable under current conditions; and those (the majority)

who support the concept and feel it is workable in the current employment and training system. The support for benchmarking is even more encouraging because program operators seem to be saying "yes, this concept is worth developing despite the initial problems we may have had with implementing benchmarking systems."

Private sector representatives contacted in the Syracuse Research survey were very supportive of the benchmarking concept and indicated particular support for the use of employer consultation and validation of benchmarks. Other employers noted that benchmarking was a way for CETA prime sponsors to gain credibility in the private sector. Interviews with educators also resulted in expressions of support. Many argued that prime sponsors should turn to educators for guidance in developing benchmarks since the educational system has had quite a bit of experience in developing competency-based training and performance benchmarks.

III. Issues in the Development of a Benchmarking System

In the fall of 1981, the Syracuse Research Corporation (SRC) completed a review of the state-of-the-art of benchmarking in the CETA system. Their findings were based on visits to sponsors who had engaged in benchmarking efforts and regional seminars in each DOL region. In their three-volume report entitled Benchmarking: A State-of-the-Art Review, SRC identified the following as the four general purposes of benchmarking most often cited by CETA prime sponsors who were involved in developing and operating benchmarking systems: (1) to link the CETA system to employers by involving them in developing and validating benchmarks that communicate to potential employers the achievements and experiences of participants in training programs; (2) to assist prime sponsors in managing their programs by providing detailed and timely documentation of the operation of their service delivery system; (3) to facilitate program evaluations by determining goals, objectives and performance standards on which to assess program effectiveness; and (4) to assist client motivation by spelling out the expectations for the individual participant within a training program.[12]

A well-designed benchmarking system should have the capacity to meet all of these prime sponsor needs, although current benchmarking operations are most likely to focus on only one of these aspects of benchmarking. This situation may be due to several factors: (1) limited organizational resources (cuts in federal spending will undoubtedly affect the capacity of staff and other resources to implement and manage a benchmarking system), (2) lack of clearly-defined competencies and benchmarks, (3) insufficient coordination of services available through the delivery system, and (4) inadequate

procedures and mechanisms for communicating information on participant progress and program operations. Often, these problems can be dealt with over time, as the benchmarking process is evaluated and refined. But several years of experience from implementing VEDP and CYEP benchmarking systems suggest some reasonable design parameters for the successful introduction of benchmarking into youth program operations.

The benchmarking system, as we mentioned earlier, is comprised of four functional components: competency areas, competency indicators, benchmarks, and assessment. While every benchmarking system is developed around these basic elements, significant differences occur in the focus of competency areas, the precision with which indicators are determined, the selection of benchmarks, and the design of procedures and instruments with which to assess performance. The most obvious differences are determined by the structure of the particular system in which benchmarking is applied, i.e., education, vocational education, employment and training.

A. Operational Functions of a Benchmarking System

Three recent studies of benchmarking in the vocational education and CETA systems offer excellent data about some of the successful examples of benchmarking designs.[13] In essence, these designs describe benchmarking in terms of six operational functions:

1. Initial Assessment of client interests, aptitudes and short and long-term goals (benchmarks) in addition to documentation of previous education and work experience;

2. Employability Development Planning (EDP) in which assessment data and client-counselor interviews determine the types of services and training that a client should receive in order to achieve agreed-upon goals;

3. Service Delivery based on service needs specified in the EDP, i.e., remedial ed., classroom training, work experience, OJT, vocational exploration, etc.

4. Reassessment (testing and measurement) to determine whether a client has successfully completed an activity and achieved previously agreed-upon benchmarks, to review EDP and determine next steps in the employment process;

5. Documentation which is based on a formal and coordinated system to collect, analyze and report accurate data on individual client progress and general program operations in a timely manner;

6. Evaluation of client and program data to determine whether systems are operating efficiently and, in the long-run, to assess the effects of specific program strategies on the post-program experiences of former participants.

Each of these functions within the benchmarking system implies specific needs in terms of staff capability and/or training; the structure of the prime sponsor organization in terms of planning, operations and administrative functions (including MIS and fiscal management); formal communication and co-ordination systems. The introduction of a new concept into already existing systems will generally be influenced by these organizational elements. The process of implementing CETA benchmarking systems for CETA youth programs will be discussed in Section IV of this paper.

B. Identifying Competency Areas

A competency-based employability development system must start with a broad consensus of what it takes to get and hold a job. Various projects have been funded to demonstrate the effects of benchmarking on promoting employability development services to youth. In FY'80 the Office of Youth Programs implemented the Consolidated Youth Employment Program (CYEP) to improve the effectiveness of youth services by combining all categorical youth programs into one and allowing clients access to activities as needed. CYEP focused on an individualized service intervention strategy that

identified client needs in terms of competency areas and assessed the achievement of specific competency indicators through the accomplishment of performance benchmarks.

The results of projects like these have played an important role in providing OYP with data that can guide them in decisions about the future potential of benchmarking and competency-building in measuring youth achievement. Although some difficulty was experienced by CYEP sponsors in their initial attempts to develop benchmarking systems, our review of the CYEP process evaluation reports revealed considerable support for using the competency areas identified there: (1) work maturity, (2) pre-employment, (3) occupational, and (4) educational. The selection of appropriate competency areas for youth employability development should be guided by several criteria:

1. Do the competency areas include all of the general behaviors that youth are expected to demonstrate?

2. Is the set of competency areas manageable? Can youth attain competency in these areas? Are employment and training services available to assist youth in developing competency in these areas?

3. Are the general desired behaviors described clearly for each competency area? Will people understand what is meant by the competency area? Will there be consistent understanding?

4. Is the definition of the competency area free of wording that suggests that some social, occupational or life roles should be valued more than others?

In their quarterly evaluations of the CYEP demonstration projects, the Technical Assistance and Training Corporation described in detail the attempts of these projects to define the four competency areas. Few were successful at developing clear statements of purpose for each area, but several projects were able to develop good general statements. Based

on a review and synthesis of the definitions developed by each of the CYEP projects, ALNA has assembled the following descriptions of four competency areas:

1. Work Maturity - a demonstrated understanding of and ability to respond to the basic requirements of the work environment including attendance, ability to follow instructions, ability to work well with others. Work maturity should be measured during participation in classroom or work experience-type activities through a participant's actual demonstration of levels of competency and documentation of achievements provided by attendance records and written evaluations from work supervisors, trainers, instructors, etc.

2. Education - a demonstrated proficiency in basic academic skills sufficient to meet normally accepted achievement levels for a selected occupational area; a mastery of basic reading comprehension, writing and computations skills necessary for gaining and holding a job. A participant's minimal achievement of this competency should result in the attainment of a high school diploma or GED and ability to apply basic math and reading skills within one grade level of those required to perform a specific occupation as defined by DOT.

3. Skill Training - a demonstrated proficiency in knowledge and skills normally required to carry out entry-level tasks of the chosen job or mastery of basic (and advanced) skills required for a specific occupation or cluster of occupations. Competency levels should be incorporated into the curriculum design, with measurement determined by attainment of technical skills and credentials, where appropriate. These knowledges and skills may be identified through a combination of DOT indicated and employer-validated competencies.

4. Pre-Employment - skills and knowledge to identify career objectives, understand employer expectations and conform to job performance requirements so that an individual can seek and obtain employment. Pre-employment activities can include classroom sessions, seminars and tests in occupational goal-setting, interviewing, completing a job application, understanding the local labor market.

While these definitions give one a sense of the kind of activities involved in a competency area, they allow enough flexibility for local prime sponsors to determine which competency areas can be applied, based on local needs; select and adjust definitions of the relevant competency

areas so that individual competency indicators and benchmarks will more accurately reflect local employment and training activity.

C. Assuming Ownership at the Local Level

Competency indicators should be selected and established to reflect local needs and the capacity of prime sponsor staff and resources to address those needs. While the National Office of DOL may define general behaviors that a CETA youth should demonstrate during the employability development process (competency areas), local prime sponsors must refine these definitions and determine what specific kinds of behavior are relevant to local hiring requirements and participant abilities.

Before actual work in setting competencies can begin, there are several planning decisions that must be made by the prime sponsor director or other key decision-maker, the major decision being "what level of commitment—in time, resources and money—am I willing to spend on this project?" This issue of commitment or ownership for the design, implementation and management of a new system is perhaps the most difficult hurdle to overcome. Even with federal mandates to support benchmarking, an adequate and useful benchmarking system will not be developed at the local level if the prime sponsor decisionmakers just "go through the motions." If local staffs are not made aware of the programmatic benefits which can be realized through the implementation of a benchmarking system, they can hardly be expected to enthusiastically support its implementation.

The planning process should be developed by specific agency staff who are assigned the responsibility as part of their job rather than "in addition to" their other work. As a planning function, this responsibility might reasonably fall to a member of the planning staff. The plan should

be developed with the cooperation of representatives of interested groups, including those providing service, those receiving service, employers, and the community at large. In addition, a very crucial coordination issue must be addressed for insuring adequate communication and cooperation between units in the prime sponsor's own agency, particularly in developing a strong communciation and working relationship between planning, MIS and operations staff who all play important roles in the implementation and management of the prime sponsor's benchmarking system.

The question of which competency areas and competency indicators should be stressed can be a difficult one for some prime sponsors. Underlying this question are two more basic questions: (1) what are the specific goals and objectives of the program, and (2) what is the service delivery capacity of the system? The development of specific and realistic goals and objectives for the prime sponsor is critical to determining the kinds of competencies that a CETA participant can be expected to demonstrate. Goals and objectives for a CETA delivery system are essential for establishing the parameters within which a prime sponsor will expect its program operators to perform. By setting these parameters, the prime sponsor can better assess whether the services provided by its programs are meeting the needs of CETA participants. Without some clearly defined goals to describe the prime sponsor delivery system and general client needs, it is difficult to develop appropriate competency indicators and benchmarks.

D. Selecting and Setting Competencies

Competency indicators should be developed on the basis of several criteria:

1. Does each set of competency indicators include all of the specific behaviors that youth must demonstrate in order to demonstrate achievement of the competency? Is the set comprehensive?

2. Can youth attain the competency indicators?

3. Does each competency indicator represent an important skill, knowledge or attitude? Should each be included?

4. Is each competency indicator expressed clearly? Will people understand what is meant? Will the understanding be consistent?

5. Is the competency indicator applicable across lines of sex, socio-economic status, race, rural and urban settings, and religious persuasions in your community?

The prime sponsor's plan for developing competency indicators and benchmarks should include the following categories of information: (1) objectives of the effort and expected products, (2) procedures to be used in completing the work, (3) responsibilities and authority of those who are to participate, (4) resources required to complete the effort, (5) schedule of activities including completion dates, and (6) description of how the results will be used. The plan should fit local conditions and reflect procedures that will meet local prime sponsor objectives within available resources. In preparing a plan, consideration should be given to the following general processes.[14]

1. Informing people about the effort - this is a crucial step as people who know about the effort are likely to participate in it. This step includes preparing general information about the effort and getting the information to those who you want to be involved in the work. Particularly important groups to involve in the information-sharing process are local planning councils (including the PIC and youth council), prime sponsor staff and prime sponsor contractors, subrecipients, etc. In addition to these more or less internal groups, it is particularly important to make presentations to local employers, since they should be involved in validating employability competencies. Perhaps more than any other group, it is vital to obtain the support of local employers for the benchmarking system.

2. Collecting information - this includes preliminary work of collecting descriptive information and instruments, carrying out data collection activities and organizing and analyzing the data collected. The process of identifying appropriate competency indicators and benchmarks for any local prime sponsor requires that the prime sponsor develop and maintain contacts with local employers to learn their expectations of job applicants. By maintaining these contacts, it may be possible to virtually insure local employer support for the benchmarking system. Prime sponsor planning staff must also design formal strategies for securing accurate data on local labor market demands and participant training and service needs.

3. Drafting the initial set of competency indicators - in this step, the data is transformed into a simple, easy-to-read set of competency indicators. Criteria for determining appropriate competencies must be set, competency statements should be written and rewritten until they are easily understood by participants, the staff and employers.

4. Validating the competency indicators - this step involves a review of the initial set of competency indicators by constituency groups (especially local employers) to make sure that these indicators are the important ones and that the statements are understood. It is also possible to use this opportunity to have reviewers prioritize competency indicators.

5. Preparing the final set - the final set of competency indicators is written, using information from the validation process as the basis.

6. Communicating competency indicators widely - perhaps the most important step in the effort is making sure that interested individuals and groups learn about the results of the effort. This is an opportunity for the prime sponsor to communicate information about the processes used to establish competency indicators, the content of the competency set and the procedures for implementing the benchmarking system. The form that this communication will take will vary with each group. For groups not directly involved with program operation or service delivery, this information can be provided as part of a publicity campaign, with brochures or a briefing session (perhaps the PICs and local employers might be the target audiences here). For groups involved in delivering services (like contractors, subrecipients), information would be generated more formally through a prime sponsor executive memo, written procedures on assessment and documentation, a half-day workshop to train appropriate service provider staff in policies and procedures related to benchmarking, and provision of technical assistance by

appropriate prime sponsor staff. Of course, the staff of the prime sponsor itself must also be trained in the benchmarking concept, policies and procedures.

7. Updating periodically - competency indicators should be reviewed and updated at regular intervals to respond to local conditions and needs. The updating process will probably not involve all of the same activities that resulted in the original set, but enough should be done to assure good input from key groups.

The processes described above are those that a local prime sponsor should follow in order to establish competency indicators that are relevant to local conditions. A good preliminary step is to identify and study competency sets developed by others. These sets of competencies should provide a starting point by introducing ideas and providing experience-based information to help along the thinking of planning groups. Appendices III and IV offer examples of competency indicators for each of the four competency areas which were identified by various CETA prime sponsors operating CYEP and VEDP benchmarking systems.

Clearly stated competency indicators let those receiving service, those providing service, employers and the community at-large know exactly what is being delivered through the program. Well-developed and communicated sets of competency indicators improve the process of several service agencies sharing responsibility for employability development of individuals.

Each agency may concentrate on a portion of the competency indicators with full employability development resulting from the efforts of the combination of agencies. This is efficient, fosters cooperation and eliminates duplication. A good set of competency indicators makes it possible to set and assess performance goals for an employability development system and to communicate the results back to interested individuals and groups. Accountability can be achieved in this way.

E. Determining Appropriate Benchmarks

Benchmarking refers to a process of (1) setting employer-validated standards of employability for CETA participants; (2) assessing participant needs and interests with respect to those standards; (3) planning a program of achievable benchmarks with each participant; (4) developing those services that will enable the participant to achieve his/her benchmarks; (5) systematically assessing and documenting participant progress toward and achievement of those benchmarks; and (6) enabling the participant to effectively communicate his/her achievements to prospective employers. Thus, benchmarking systematically ties together elements of existing CETA programs and can become a unifying concept for addressing the perceived needs of the local delivery system for (1) increased access of CETA participants to private employers; (2) improved matching of CETA program objectives with the realities of the job market and participant needs; and (3) accountability for the effect of CETA programs on the employability of participants.

In a general sense, the actual development of benchmarks should rely on some framework for defining, measuring and documenting the achievements of each individual participant. Once the prime sponsor has determined which competency areas are significant to the development of its participants and has selected competency indicators for each of these areas, it must design a standard approach to be used to measure and document the attainment of these competency indicators.

Consistency and standardization of benchmarks for each identified competency indicator is important in order to make benchmarking a useful tool for communicating a youth's experiences and achievements to employers, educators, and others in the community. Benchmarks also make it easier

for participants and program staff to communicate to each other what they believe to be reasonable and "doable" achievements for the participant. In some instances, benchmarks are numerical measures of work achievement, like reporting to work on time for nine out of ten days. In other areas, benchmarks are determined through observations of behavior in a work or classroom setting or in some controlled situation like a role-play or mock interview. In still other areas, benchmarks are defined by how well a client scores on written tests of skill or aptitude.

The identification of specific performance benchmarks should involve a consultative process similar to that used to identify and define competency indicators. Decisions about which benchmarks to identify cannot be made in isolation. The selection of benchmarks must consider local labor market conditions, employer expectations, participant needs for employability development and the capacity of the prime sponsor delivery system to provide appropriate employment and training services. Benchmarks must reflect real outcomes so that their achievement indicates that a CETA participant is job-ready. In identifying appropriate benchmarks, a prime sponsor should concentrate on three major decisions:

1. What competency areas should be stressed or at least addressed first?

2. Within a competency area, which specific competency indicators should be singled out for benchmarking?

3. For every competency indicator selected, what behavior indicates attainment of the competency?

With the prime sponsor staff again playing the key role as coordinator and manager of the development process, benchmarks should be determined in the following manner:[15]

1. Review each competency indicator and determine that each is defined in terms which are observable and measurable behaviors and attitudes.

2. Translate the definitions into behavioral learning objectives, i.e., criteria and benchmarks, which represent the minimum skill levels for certification in the competency area.

3. Refine objectives, drawing upon input from appropriate advisory groups to ensure that definitions and objectives reflect the standards and expectations of the local labor market and speak the language of the private employer.

4. Identify or develop appropriate assessment techniques.

5. Design or select appropriate assessment instruments.

6. Incorporate appropriate assessment criteria into forms and procedures related to assessment and employability development plans (EDPs).

7. Develop appropriate certification and documentation systems.

1. Reviewing Appropriate Competency Indicators

The acquisition of various competency indicators is defined by a participant's successful completion of specific educational, experiential and training activities which the participant, counselor and other appropriate prime sponsor staff have agreed are important for that individual's successful transition to employment. The development of standards against which to measure participant success involves reviewing each competency indicator to identify the performance of some activity or the demonstration of some attitude which signifies a certain level of proficiency.

In general, competency indicators should be clearly defined statements that identify knowledge or content, function or performance and personal characteristics.[16] Knowledge competencies require some kind of information about a particular subject or topic (e.g., knowledge of potential employment prospects in three local firms; knowledge of entry-level skills for a chosen occupation; knowledge of health and safety requirements on a job). Function competencies require the ability to perform some prescribed action (look through the classified ads and

identify five possible job openings in the client's chosen occupational field; report to work on time; assemble and disassemble a circuit board; read a blueprint). Personal characteristics cut across both of these dimensions and identify personal qualities or attributes such as intelligence, honesty and conscientiousness that are desirable in the performance of any job.

2. Translating Definitions into Behavioral Learning Objectives

Once competency indicators have been reviewed and, if necessary, revised into clear statements of knowledge, performance or personal characteristics, these statements must be broken down into behavioral learning objectives. These objectives are generally developed through consultation with local employers to determine what they consider appropriate job-related behavior, consultation with LEAs to determine minimum general education levels, and review of training curricula to identify criteria for measuring proficiency in specific occupational and educational skill areas.

For example, if employers say that reliable attendance is an important attribute looked for in potential employees, benchmarks would be established for documenting participants' attendance and determining a specific range of performance that could be measured, i.e., excellent, good, fair, poor; or acceptable/unacceptable. Another example would be to identify behavioral objectives for a learned skill like job finding. The ability to find a suitable job in a reasonable period of time demands a series of learnable skills, including (1) how to access career and occupational information, (2) how to write a resume and fill out an application form, and (3) how to respond in an interview situation.[17] Learning objectives could be developed to assess the acquisition of each of these skills by requiring that the participant be able to (1) identify three occupations in a chosen field and describe the responsibilities and duties of each, (2) write a

resume with no spelling errors or fill out an application neatly and accurately, and (3) participate in two mock interviews and demonstrate a thorough ability to effectively communicate and relay relevant information.

It is important here that appropriate prime sponsor staff are able to provide the benchmarking work group with sufficient data to assist in this decision-making process. These data might include benchmarks that have already been developed by other prime sponsors, curriculum outlines or lesson plans that identify learning objectives of the appropriate skills training courses, skill requirements identified in appropriate apprenticeship programs, etc.

3. Refining Objectives

Refinement of the selected learning objectives involves reviews by a larger group of "advisors" like a youth planning council, PIC or other volunteer body of educators, employers, CETA program operators, etc. This process should again consider whether the benchmarks represent realistic and achievable outcomes of the prime sponsor's youth programs.

4. Identifying Appropriate Assessment Techniques

Benchmarks must be defined in terms which can be directly quantified and measured or for which we can develop proxies to represent them.[18] For example, if the prime sponsor identifies an occupational skills benchmark as "the ability to answer, with 70% accuracy, a test which includes mathematical computations performed as a cable TV installation technician," the achievement of those benchmarks can be measured by the participant's score on the test. If another benchmark is "to carry out instructions in an expeditious manner," some proxy for measuring this

benchmark must be developed, like carrying out the instructions and completing the task in 15 minutes with no errors.

The measurement of these benchmarks is performed through some method of assessment and the use of appropriate assessment or testing instruments. Numerous assessment approaches are available, but when you "boil it down," there are only a few essential differences among them. These differences revolve around the three basic components of any assessment: stimulus, response and scoring method.[19] In all assessment methods, some stimulus is given to the examinee (e.g., a paper with questions on it or parts of a machine needing to be assembled) which requires some response (e.g., writing the answers to questions or assembling the machine) which will be scored according to some established criteria (e.g., answers given are compared to a list of previously established correct answers or the machine's smooth and efficient operation is judged.)

Various combinations of stimulus, response and scoring methods have evolved over time for measuring competence. Three basic types of assessment methods exist:

1. Behavioral observation is most frequently used to measure a participant's application of a skill, knowledge or attitude on the job or in a simulated situation. Examples of behavioral observation would be a work supervisor's assessment of a participant's punctuality on the job or an assessment of an individual's ability to communicate during a mock job interview.

2. Product reviews are used to assess whether a participant can demonstrate that he or she possesses a particular skill, e.g., write a report, assemble a carburetor.

3. Oral or written questions can assess whether a participant has acquired knowledge or can apply the knowledge acquired by solving a problem.

In determining which assessment method to select, the prime sponsor should consider (1) the nature of the competency indicator and benchmark (a skill, knowledge or attitude) and (2) whether the benchmark will assess a process people use or a product they produce.

5. Designing or Selecting Appropriate Assessment Instruments

It is worthwhile to consider using an existing assessment instrument rather than developing your own because it generally will be less expensive and certain aspects of the instrument's technical quality are likely to be higher. Existing instruments are available from publishers or persons who have developed their own for a specific use but have never published them. Published tests are generally extensively reviewed, pilot tested and revised before publishing, although they may not have all the characteristics important for the particular situation.[20] Prime sponsor staff should review these testing materials to determine whether they meet the needs of the particular competency areas involved.

Three general categories of criteria should be reviewed when selecting assessment instruments:

1. Validity, or the extent to which the instrument measures the skills, knowledge or attitudes looked for. This is the most crucial issue in selecting an appropriate instrument particularly if you are considering using one that is already developed. Each question should be carefully reviewed to determine whether a correct answer to that question will help to determine a participant's achievement of a benchmark.

2. Usability, or the extent to which the assessment instrument is suitable for administration by current staff or if it must be administered by a certified staffperson. Does the test measure a skill level which can be attained by participants?

3. Reliability, or the extent to which an instrument is accurate in its measurement of a level of knowledge, skill or an attitude. In general, objective (paper and pencil) tests are quite reliable and accurate as measures of particular knowledge. Tests of attitude are considerably less reliable.

6. Designing Forms and Procedures

Once appropriate assessment criteria have been selected, forms and procedures must be designed to document assessment and benchmarking activities. Aside from the paper and pencil tests referred to in the previous subsection, there will be other internal reporting forms that need to be developed for counselor interviews, job supervisor evaluations of participant activity, other types of participant performance evaluations, or individual participant progress reports written by service deliverers after a youth has completed a particular unit of service. Procedures should be developed for completing the forms in a timely manner and ensuring that these documents are maintained in client folders.

The achievement of specific benchmarks and attainment of competency indicators must be documented in the client's EDP. When attainment of a competency indicator is also translated into completion of a specific CETA program activity (i.e., work experience, ESL course, electronics technician training, etc.), that achievement is also documented on prime sponsor MIS forms, like a change of status form or a termination form (in the case of a participant's completion of CETA).

7. Developing Appropriate Documentation Systems

Decisions must be made about what internal prime sponsor processes need to be established or refined to appropriately document participant achievements. These systems need to identify the types of information that need to be documented; the forms, checklists or narrative reports in which this information should be reported; the frequency with which this information should be documented (monthly, quarterly); and the individual(s) who should be responsible for documenting the information.

Prime sponsors are required by the CETA regulations to establish certain basic systems for documenting participant progress. In most cases, the implementation of a benchmarking system will require some revisions in existing procedures to allow for the introduction of such benchmarking concepts as reassessment, employer-validation and more detailed EDP planning.

8. Credentialling

Credentialling, or certification, documents a youth's achievement according to a standard set of benchmarks which should enable that particular youth to successfully enter and compete in the labor market. As a youth achieves benchmarks towards a competency, he or she is building a resume for the job search effort.

If prime sponsors are addressing educational or occupational skill areas for which established credentials exist (i.e., high school diploma or GED; apprenticeship certificate, etc.), benchmarking designs should focus on competency indicators that will lead to those credentials. It is very important for prime sponsors to work with employers and credentialling institutions to have benchmarks accepted for credentialling purposes. In other competency areas where there are no existing credentialling systems, prime sponsors should attempt to establish the validity of their benchmarking systems as reliable measures of achievement so that they too can be accepted and used by prospective employers, educational institutions, etc., that would require documentation of CETA participants' achievements.

By developing benchmarks to satisfy the specific requirements of each set of competency indicators, identifying the methods and instruments to assess participants' achievements, and designing appropriate processes

for documenting these achievements, participant progress can be monitored and service needs can be revised to ensure participant chances for an adequate job placement. Appendix IV of this report offers some examples of benchmarks developed by the St. Louis University Center for Urban Programs for a VEDP benchmark assessment manual.

IV. Implementing a Benchmarking System: Selected Issues

The implementation of the benchmarking concept and systems design requires decision-making at three levels:

1. The national level, where the concept is defined, basic elements and procedures are identified, and policy guidance is provided;

2. The regional level, where technical assistance and training are made available to local prime sponsors; and

3. The local level which accepts this guidance, implements procedures based on the capabilities of prime sponsor staff and resources, and monitors and evaluates program performance to insure that the benchmarking system is operating efficiently.

A national benchmarking requirement will have a greater chance for successful implementation if uniform systems criteria for local prime sponsor adoption are provided. Regulatory language and explicit guidelines should address such issues as: (1) the definition of the concept; (2) the identification of benchmarking as a priority activity; (3) a general description of regional and local responsibilities for implementation; (4) the specific requirements for integrating or redesigning existing operational systems to accommodate benchmarking processes (i.e., the development of formal procedures for assessment and reassessment of participant progress; the assessment or progress based on the achievement of specific benchmarks; the development of formal procedures for documenting progress in EDPs, etc.); (5) the involvement of advisory groups to develop local competency indicators and benchmarks; (6) the requirement for obtaining employer-validated competency indicators and perhaps some options for how that information can be obtained; (7) the requirements for documenting the benchmarking process; and perhaps (8) a discussion of a reasonable implementation timeline.

An important issue to be considered in the implementation of a national benchmarking system is the level of specificity with which the DOL national office can reasonably expect to define an acceptable system and develop requisite monitoring and documentation standards. A review of relevant benchmarking literature—both within the employment and training system and outside it—offers some guidance for the Office of Youth Programs. Specifically, Benchmarking: A State-of-the-Art Review, by Syracuse Research Corporation, and Progress Toward Integrating Services for Youth, by TATC, provide some excellent observations. CETA program operators who have attempted to implement benchmarking systems have voiced common concerns regarding the relative roles of the regional and national DOL in providing guidance.[21] Interviews and workshops by the Syracuse Research Corporation indicate that prime sponsors want a clearer definition of (and perhaps closer involvement from) the roles of the national and regional offices, but they did not want them to "infringe" too much on local control. Prime sponsors want enough structure from the national and regional offices but they are also concerned that a nationally mandated benchmarking system might not be flexible enough to meet local priorities for client needs, staff resources and local delivery system capabilities. It is also essential for the Department of Labor to carefully consider the costs which will be incurred in implementing a benchmarking requirement. If these costs are substantial, DOL must provide for this in the systems implementation plan.

Given these particular caveats, there are some specific criteria that should be considered in a benchmarking systems design:

1. It should identify competency areas which define those general behaviors that a youth must develop in order to make a successful transition into the labor market;

2. It should identify minimum competency indicators which represent specific skills, knowledge or attitudes for which benchmarks will be developed;

3. It should require benchmarks which are locally-based and developed through consultation with employers, the community, labor organizations, local education agencies, and other relevant groups who can provide input into defining those skills, knowledges or attitudes which must be learned in order for an individual to obtain employment;

4. It should define benchmarks in terms that are quantifiable and measurable;

5. It should include measurement instruments for each benchmark;

6. It should provide methods and procedures for documenting a participant's accomplishment at meeting benchmarks and acquiring competencies;

7. It should provide some credential or other documentation of a participant's achievement of competencies which the individual participant can present to an employer.

The Syracuse and TATC reports represent a good first effort at identifying systemic problems that surfaced during the implementation of benchmarking in a selected number of CETA prime sponsors. Syracuse concluded from their interviews that problems with systems implementation were based on the lack of any system-wide definition of benchmarking. The lack of adequate definition resulted in a variety of perceptions about what benchmarking was supposed to do. In addition, TATC quarterly reports of CYEP benchmarking revealed that, although prime sponsors were provided with a planning package and technical assistance from national or regional office staff, each prime sponsor was generally left on its own when it came to actually designing and implementing the benchmarking system. Any future

efforts toward implementing a national benchmarking requirement should address these issues of clearly defining key concepts and terms, and providing adequate technical assistance, training and financial support to local program operators.

Syracuse Research analyzed six operational issues which concerned prime sponsors about the implementation of benchmarking procedures: timing, resources, scope, design, impact on other operational systems, and staff training and capacity. These issues are particularly important, given current budget restrictions, cuts in staff and other local resources, and the still unresolved future of CETA programs in general. A brief discussion of each of these issues follows.

A. Timing

Nearly all of the prime sponsors interviewed by Syracuse were concerned that there be enough time allowed for them to implement the system. A suggested time period was approximately two years, which would allow prime sponsors to phase in the new system. The first year would concentrate on development of systems, policies and procedures. The second year would focus on implementation and systems refinement. The discussion of timing is, of course, linked to the complexity of the benchmarking system to be implemented. Simple designs would take less time and resources to implement than more sophisticated ones. This, in turn, is affected by a particular prime sponsor's resources, size and scope of the delivery system. With two years of CYEP benchmarking just completed, the findings from the TATC evaluation provide some useful information regarding the issue of timing.

B. Resources

The amount of money that prime sponsors have to operate youth programs has an impact on the types of benchmarking practices that they utilize. Syracuse Research noted that most prime sponsors felt that implementation of a new operational system would require financial support over and above what was allocated for normal program operations. Most prime sponsors felt that they should not be asked to implement a benchmarking system unless adequate resources were provided. The phase-in approach (over a period of two years) was suggested as one way to spread developmental costs over time, thereby lessening the financial strain that would result from having to implement a system in two or three months.

C. Scope

Prime sponsors need to decide whether all youth programs, including Titles II-B and VII, should be included in the initial implementation of benchmarking systems. Some prime sponsors argued that benchmarking should not be applied to SYEP programs; for example, since they are short-term activities to which long-range developmental measures could not be applied. Other prime sponsors believed that SYEP could benefit by the structure offered in benchmarking and that limited, achievable objectives for youth programs should be developed.

D. Design

The issue of program design focused on (1) the variations in the design of intake and assessment procedures, (2) employability development planning and recording, and (3) documentation and certification procedures, MIS procedures, etc.

Very briefly, prime sponsors indicated a wide variety of systems designs and procedures for assessing client needs and assigning services.

For some prime sponsors, the assessment process involved a minimal amount of testing and counseling, with the EDP used to document initial assessment activity but with little refinement beyond intake. Services in some prime sponsors were assigned sequentially (e.g., ESL before a classroom training assignment), although there was no indication that reassessment was made upon the completion of one activity and assignment of another. As a result, benchmarking was used more in form than in content; client records were documented in a "spotty" manner. Because benchmarking is focused on a long-range, developmental approach to the delivery of employment and training services, prime sponsor directives should reinforce the importance of assessment and reassessment, accurate documentation in the client EDP, and closer scrutiny of what it will take to prepare a particular individual for employment. Prime sponsors should attempt to refine their assessment procedures and perhaps review operations in terms of who should assess clients, what kinds of tools should be used (interest or aptitude tests, work sampling, etc.), what assessment techniques are appropriate for a particular sponsor client population, what types of information should be recorded in the EDP, how much should the client's development be documented in the EDP, etc. If the benchmarking system is to be used as a means of providing the CETA client with suitable employment credentials, these issues need to be addressed.

E. Impact on Other Operational Systems

Benchmarking implies that a prime sponsor can develop and maintain several management and administrative systems:

1. an MIS that can collect benchmarking data and produce usable reports;

2. a planning and evaluation capability that can determine what kinds of benchmarking data can be used to evaluate program performance;

3. a service delivery/client flow system that is adjusted to accommodate various elements of the benchmarking process (i.e., a "tighter" assessment system that allows for scheduled reassessment of clients throughout their participation in CETA);

4. clearly defined staff roles and organizational responsibilities that identify, for example, the relationship of operations staff to MIS and planning in terms of monitoring the performance of the benchmarking system.

Because benchmarking is intended to influence all of these organizational units, it is necessary that local prime sponsors are provided with sufficient time to prepare their existing systems for the introduction of benchmarking. A work group of key staff should be identified whose responsibility it would be to review the developmental tasks of implementation and advise prime sponsor decision-makers on appropriate policy and procedures.

F. Staff Training and Capacity

The successful introduction of a new management system into any organization must be preceded by appropriate staff training and preparation of companion management systems.

Many of the prime sponsors interviewed by Syracuse Research Corporation indicated a general lack of in-house expertise in establishing or operating their benchmarking systems.[22] Prime sponsors expressed a need for technical assistance and staff training, and indicated support for an "extended" period of planning and technical assistance. One suggestion discussed in the section on "timing" in this paper, proposes a two-phased approach that could accommodate sufficient time for systems development. [See Section A]

For many of the prime sponsors interviewed by Syracuse, there was particular concern regarding whether cuts in local operating budgets and resulting cuts in staff would preclude anything short of the above-mentioned phase-in approach. By phasing-in staff training and systems development over an entire fiscal year, prime sponsors may be better able to introduce procedures, train staff in implementing those procedures and "test" their operation as well as maintain existing service delivery activities at an adequate level. Staff training during the developmental phase could be provided by regional DOL staff to selected staff of prime sponsors throughout the region and perhaps followed-up by technical assistance to individual prime sponsors.

Aside from providing adequate staff training on the design and implementation of a benchmarking system, prime sponsors need to review existing organizational units and systems to determine what effects benchmarking will have on their operation. Some of the salient features of a benchmarking system include (1) assessment and regularly scheduled re-assessment of participant progress, (2) frequent testing and measurement of achievement of benchmarks, (3) consistent documentation of achievements in client EDPs, and (4) regular evaluation and employer validation of competency indicators and benchmarks. While most of these features already exist in some form in the prime sponsor system, they will, no doubt, need to be revised to accommodate procedures for developing, measuring and documenting competency indicators and benchmarks.

The introduction of benchmarking will also require revision of staff job descriptions so that responsibilities for the operation and management of the benchmarking system are already assigned. Divisions of labor and identification of tasks might result in the following types of staff assignment:

1. Planning staff to conduct labor market research, provide direction and staff support to benchmark work groups, conduct employer validation process.

2. Assessment staff to provide regularly scheduled participant interviews, assist participants in EDP planning, administer and score assessment tests, document benchmark achievements, select appropriate participant services.

3. Training staff and worksite supervisors to provide feedback and evaluations of participant performance/achievement of benchmarks, assist in validating curricula to determine that it meets employer expectations, reflects local labor market needs, and enhances participants' employability development.

4. MIS staff to determine whether the introduction of benchmarking may require some additional data collection requirements or revisions in definitions of participant status (e.g., perhaps an additional item on "change of status" form might be, "achieved benchmark" or "achieved competency in _X_" or "acquired _X_ credential").

5. Monitoring staff to review the performance of benchmarking at regular intervals, determine that all systems requirements are functioning (e.g., properly documented EDPs, adequate testing/assessment facilities, regularly scheduled reassessments for participants).

V. Findings

Based on our research, the following appear to be among the more prominent features which a nationally-mandated benchmarking system should possess:

1. Regulations promulgated by the National Office of the Department of Labor which:

   a. define the concept;

   b. specify basic terminology, such as competency area, competency indicator, benchmarks, assessment;

   c. determine the scope of the effort, i.e., will benchmarking be mandated for all youth activities or only Title IV;

   d. identify roles and responsibilities; and

   e. indicate standard policies and procedures.

2. A national information network which allows benchmarking practitioners the opportunity to share experiencies and expertise.

3. Technical assistance and training which are provided by regional office staff to local prime sponsors.

4. Responsibility for system implementation and operation which is delegated to local program operators. Local program operators should be allowed sufficient training, financial resources and time to develop and implement a benchmarking system.

5. Competency indicators and benchmarks which are:

   a. selected and validated with local employers;

   b. reviewed by local employment and training advisory bodies; and

   c. re-evaluated on a regular basis.

6. Benchmarks which are quantifiable measures of proficiency in a given competency area.

7. Benchmarks which establish standard measures within a given competency indicator. When appropriate and possible, several benchmarks should be established for each competency indicator.

8. Benchmarks and competency achievement which are tied to specific objective measures of attainment.

9. Assessment tools and procedures which:

   a. identify participant needs;

   b. select appropriate services to be delivered; and

   c. monitor participant achievement of benchmarks.

10. Assessment goals, activities and services which are clearly related to an individual's employability development plan (EDP).

11. Employability development plans which document participants' short-term and long-term employability goals and achievements.

12. Local incentives (including sufficient financial support) which encourage prime sponsors to develop and maintain adequate benchmarking systems.

Footnotes

[1]"Benchmarking" as discussed in this paper should not be confused with "performance benchmarks" used in FY 1982 grant review guidelines for CETA Title IIBC programs. IIBC performance benchmarks proposed a methodology allowing regions to calculate standards against which to review and analyze prime sponsor annual plans. The methodology took into account such local performance variables as participant characteristics, program mix, labor market and other local economic conditions.

[2]Benchmarking: A State-of-the-Art Review, Vol. II, Syracuse Research Corporation, New York, May 1981, p. 13.

[3]Ibid., p. 13.

See also: Progress Toward Integrating Services for Youth, Sixth Quarterly Report, Technical Assistance and Training Corporation, Washington, D.C., January 1981.

This report of CYEP program performance during the first quarter of FY 1981 offers several observations about problems encountered during CYEP implementation and the development of "formal" benchmarking systems. See specifically Sections II and III.

[4]See: Eric Butler and James Darr, Research on Youth Employment and Employability Development: Educator and Employer Perspectives, Youth Knowledge Development Report 2.16, Washington, D.C., May 1980, p. 7-8.

Employers appeared repeatedly to advise CETA prime sponsors that in order to develop employability in an individual, CETA programs need to assist participants to: (1) gain work experience, (2) mature in work attitudes, (3) acquire basic educational competencies, and to a lesser extent (4) acquire occupational competencies.

A 1977 survey of 500,000 small business members of the National Federation of Independent Businesses (NFIB) found that employers shared the following concerns about job applicants: (1) lack of job skills (39 percent of survey respondents), (2) won't stay long on the job (39 percent), (3) can't read (13 percent), (4) lacks good appearance (21 percent). Another NFIB survey conducted in January 1981 reported that "finding qualified employees" ranked among the top ten problems confronting employers after interest rates, cost of insurance, cost of energy, cost of labor and local tax rates.

[5]Paul Thurston and Ernest R. House, "The NIE Advisory Hearing on Minimum Competency Testing," Phi Delta Kappan, Vol. 63, No. 2, October 1981, p. 87.

[6]W. James Popham, "The Case for Minimum Competency Testing," Phi Delta Kappan, Vol. 63, No. 2, October 1981, p. 90.

[7]Ben A. Hirst, Jr., "The Components of Competency-Based Vocational Education," American Vocational Journal, Vol. 52, No. 8, November 1977, p. 32.

[8]See: Benchmarking: A State-of-the-Art Review, op. cit., Vol. II, pp. 46-48.

[9]See: St. Louis University Center for Urban Programs, The Vocational Exploration Demonstration Project: An Analysis of the 1979-80 In-School Extension Components, April, 1981.

[10]CYEP Goals Mentioned in EDPs. For the CYEP sample as a whole, 29 percent of the EPRs did not document short-range goals. The remaining records contained 566 goals. Most frequently rated as short-term goals were:

Gain work experience	15.7%
Complete high school	15.2%
Acquire good work habits	12.9%
Define career goals	10.1%
Obtain (specified) skill training	9.7%
Obtain GED	7.1%
Obtain (unspecified) training	6.4%
Learn job search skills	5.5%

Approximately 44 percent of the goals mentioned were pre-employment related, 29 percent education related, and 16 percent were training related. At four sites, the highest percentage of the short-term goals were pre-employment related. At three sites the highest percentage of the goals were education related.

In the CYEP sample, 32 percent of the EPRs did not record long-range goals; 12 percent recorded that the youth were undecided. In the remaining records, 252 goals were recorded:

Specific technical or paraprofessional occupational	18.3%
Specific unskilled or semi-skilled occupational	15.0%
Specific professional occupational	12.3%
Clerical occupational	12.3%
Specific skilled occupational	10.3%
Attend college	7.9%
Attend other post-secondary school	4.4%
Enter military	4.4%

[11]In their study, Syracuse Research Corporation conducted visits to selected prime sponsors in each of the ten federal regions. In all, their research involved contact with each of the CYEP sponsors, and with many interested individuals in each region.

[12]Benchmarking: A State-of-the-Art Review, op. cit, pp. 16-17, 53-61.

[13] See: a) Benchmarking: A State-of-the-Art Review, Vol. I, II, III, Syracuse Research Corporation, New York, May 1981.

b) The Vocational Exploration Demonstration Project: A Preliminary Analysis of the 1979 Fall Component, Center for Urban Programs, St. Louis University, August 1980.

c) Progress Toward Integrating Services for Youth, a series of quarterly reports on CYEP demonstrations, Technical Assistance and Training Corporation, Washington, D.C., January 1981.

[14] Competencies, Benchmarks, Assessment: Building Employability Programs That Meet Local Needs, Northwest Regional Education Laboratories, June 1981, pp. 14-15.

[15] Ibid., pp. 14-15.

[16] See: Robert J. Tolsma, Sharon E. Kahn, Stephen E. Marks, Carl H. Chiko, "A Model for Generating Competencies for the Employment Counselor," Journal of Employment Counseling, Vol. 16, No. 1, March 1979, pp. 5-15.

[17] Ibid., p. 9.

[18] See: Robert W. Brown and Jeffrey A. Kottler, "Increasing Client Employability Through Skill Development, Journal of Employment Counseling, Vol. 16, No. 3, September 1979, pp. 165-171.

[19] Competencies, Benchmarks, Assessment: Building Employability Programs That Meet Local Needs, op. cit.

Northwest Labs concentrated quite a bit of this publication on identifying and developing assessment instruments and testing procedures. Several lists appear in the appendix to their work which identify publishers and specific testing instruments.

[20] Ibid., p. 39.

[21] Benchmarking: A State-of-the-Art Review, op. cit., pp. 71-73.

[22] Ben A. Hirst, Jr., "The Components of Competency-Based Testing," op.cit., pp. 32-35.

[23] Fifth Annual Report of V-TECS, Vocational-Technical Education Consortium of States, Atlanta, Georgia, July 1978.

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Appendix I

VOCATIONAL EDUCATION: PROCESSES AND SCOPE

A. Processes

In our research, we discovered several articles which described procedures used to develop competency-based voc-ed programs and materials. Since these reflect practices developed after years of experience, they can serve as models for the Employment and Training System in efforts to develop similar approaches.

In an American Vocational Journal article entitled, "The Components of a Competency-Based Vocational Education," Ben Hirst suggests that there are ten basic components in developing a competency-based voc-ed program.[23] In essence, these components include the following:

> Component One: Employment Opportunities for Students. Job opportunities and future manpower needs are the primary factors that determine whether a program is needed. Local labor market data are available to teachers from individual businesses and industries, the local Department of Labor offices, or from the state division of vocational education.
>
> Component Two: Identifying Tasks That Workers Perform. Based on the information from Component One, jobs are identified for which students are prepared. A careful analysis is made to determine the tasks which workers employed in those jobs are required to perform.
>
> Component Three: Obtaining or Developing Occupational Inventories. After developing the list of tasks which workers are required to perform, one should conduct interviews with workers who are actually doing the jobs to verify and update the task list. Based on the verified task list, it should be possible to determine the degree of difficulty of each task, the time it takes to complete each task, and identify who performs the task.
>
> Component Four: Analyzing and Using Occupational Survey Data. This step consists of arranging tasks according to the percentage of workers performing them, relative time spent and relative task difficulty. Before writing a performance objective, each task must be analyzed to determine the steps the learner must follow to accomplish the task. The performance objective should be validated with a small group of employed workers.

Component Five: Analysis of Existing Materials and Media. The task statements, collection of task information, and the performance objectives serve as the basis for analyzing instructional materials and media.

Component Six: Develop Needed Materials and Media. The task analysis may identify new units of work being accomplished on the job. Before developing materials, determine whether you need informational materials, materials that show examples, or materials that provide learners with practice for meeting the criteria for success.

Component Seven: Developing Lesson Plans. The lesson plan is a specific plan defining the performance needed to transfer knowledge, direct the acquisition of knowledge, and demonstrate and guide student performance. The lesson plan is a blueprint for teacher performance and student learning.

Component Eight: Test New Materials and Media and Lesson Plan. In a competency-based program, learning is the constant and time the variable. Instruction is provided until all of the students meet the performance criteria. Trying out materials, determining their effectiveness, and revising materials until they meet the criteria for success are the key points in instructional validation.

Component Nine: Revising Materials and Media. Instructional materials should be reviewed periodically to determine the need for revisions. New or revised materials may be required to meet new performance criteria; changes in instructional focus, etc.

Component Ten: Reviewing and Updating the Task Analysis. The occupational inventory must undergo periodic review to determine task changes in the world of work. Some occupations change more frequently. The important rule is: keep your instructional program responsive to changes in the job.

The V-TECS model offers a good working example of how performance objectives and performance guides for students in vocational-technical education are developed for state, regional and national usage. Initiated in 1973, the approach specifies uniform methods and procedures for the member states and agencies to ensure that quality products will be developed and transported among the states. The V-TECS consortium allows its members to share research and development costs, minimize duplication

of effort in occupational analysis and curriculum development, share the cost of expensive computer equipment and technical personnel, promote the concept of competency-based programs, and reduce the cost of materials development through improved project management techniques.

V-TECS' role is to develop catalogs of performance objectives and performance guides on specific jobs. The V-TECS methodology includes eleven steps.[24]

Step One: Prioritized List

Job titles or occupational areas are selcted from a prioritized list derived from the Dictionary of Occupational Titles (4th edition).

Step Two: Selection of Agency to Develop Catalog

A memorandum agreement is arranged between V-TECS and the state agency developing the catalog in an occupational area.

Step Three: Preliminary Research

State-of-the-art research activities are conducted to identify performance-based curriculum materials and other related information. A formal report is prepared which includes the following information:

1. An assessment of existing curriculum materials.
2. Available lists of tasks performed by workers.
3. Tools and equipment used by workers.
4. Sources for the identification of a population of workers.

Step Four: Occupational Inventory

The tasks, tools and equipment identified in STEP THREE are the basis for developing the occupational inventory. Workers are interviewed to establish content validity. The inventory is sent to a predetermined sample of workers to establish construct validity. The final inventory defines what is done, including the current tasks and procedures.

Step Five: Population/Sample Design

The workers involved with the job and the establishments where they work are identified. A sample is drawn for survey purposes on the part of the agency developing the catalog.

Step Six: Report of Findings

This report contains an updated state-of-the-art finding, an approved occupational inventory, a design for sample population, and a list of all references found. This report is sent to all members of the V-TECS consortium.

Step Seven: Data

The data are derived from the occupational survey, are computer processed and incorporated into the catalog development.

Step Eight: Writing Team

The writing team is made up of instructors with expertise in the occupational area, supervisors and incumbent workers. V-TECS trains the team.

Step Nine: Field Review Process

The occupational survey data and the writing team materials are compiled into a field review document. The document is reviewed by instructional personnel, content specialists and curriculum development specialists. All of these inputs are evaluated and incorporated into the development of the final catalog.

Step Ten: Final Catalog

The final catalog contains:

1. An overview of the developmental process,
2. Duty and task statements listed from the occupational inventory and writing team input,
3. Performance objectives and performance guides for each task,
4. A list of tools/equipment, and
5. A Cross-Reference Table which is an index of duties and tasks and performance objectives.

The final catalog is sent to all V-TECS consortium members.

Step Eleven: Dissemination

A dissemination plan is required by V-TECS for each member state. Each state is responsible for getting the catalogs to the local programs.

The V-TECS catalogs are not in themselves curricula or performance-based programs. They serve as:

- A means for describing exactly those tasks which the student can perform and how well s/he can perform them;
- A basis for developing criterion-referenced test items;
- A means of identifying prerequisites such as minimum reading abilities, the ability to discriminate between colors and physical requirements, etc;
- A rationale for sequencing instructional units; and
- Intermediate learning checkpoints which must be addressed in preparing the student for task accomplishment.

The catalogs are stored in computers and offer standards for job performance. The significance of these materials is the validation process and the procedural approach for adaptation in local programs.

B. Scope of the Vocational Education System

Vocational education is an integral part of American education. Its intent is to prepare persons for entry into occupations; its goals are consistent with the more generally stated aims of formal education to prepare persons for meaningful and productive lives. Vocational education both complements and builds on basic and applied skills emphasized in the early years of formal schooling.

The Vocational Education Act (VEA) has mandated a reporting procedure, the Vocational Education Data System (VEDS), to gather information on training programs and follow-up studies of program leavers who were trained in programs administered under the VEA. The charts and analysis which follow summarize some of the data collected by VEDS for the year 1978-1979.

Vocational education programs enroll students at both the secondary and post-secondary levels. Figure 1 provides a breakdown of enrollments at these two levels.

Figure 1

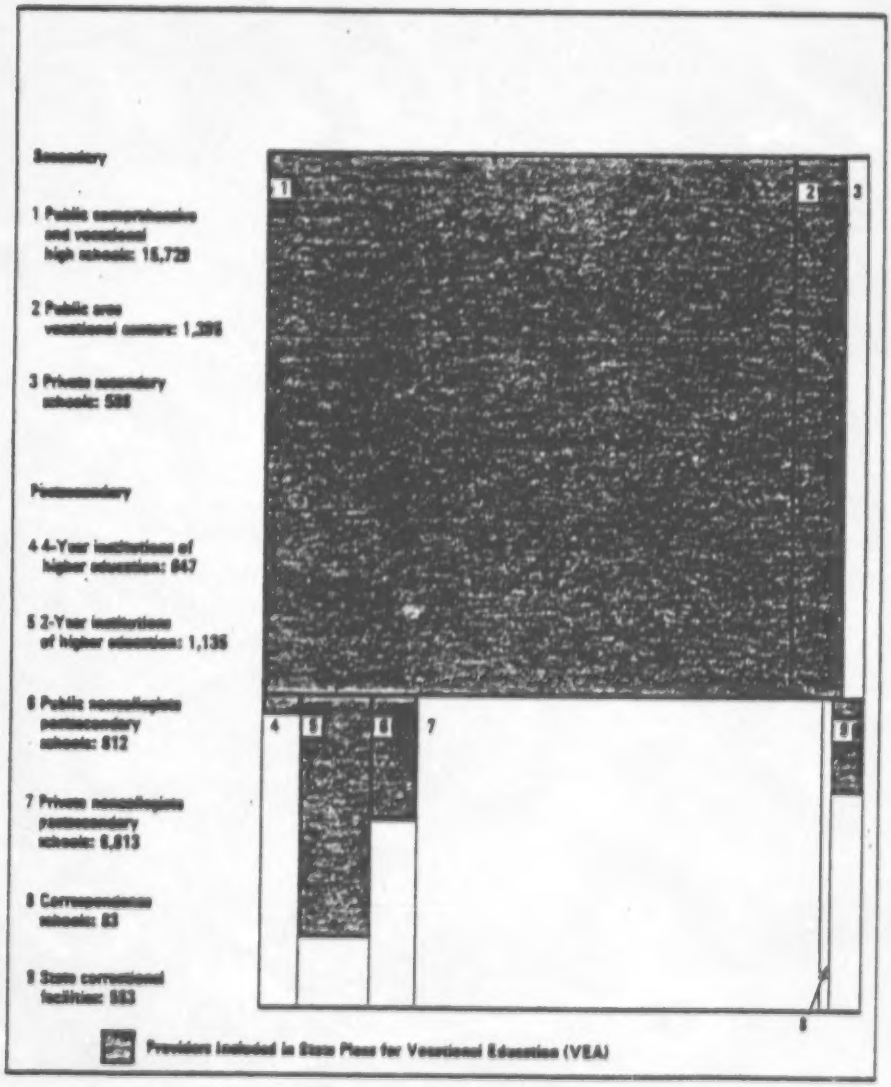
Vocational Education Program Enrollment Figures - 1978-79	
Secondary Enrollment	12,765,080
Post-secondary Enrollment	6,820,064
Total	19,585,144

This total represents enrollees in all programs, including vocational programs in most privately controlled institutions which are not included in State Plans for Vocational Education administered under the Vocational Education Act in 1978-79.

In the 1978-79 fiscal year 17,033,620 individuals were enrolled in VEA administered programs. There were 27,753 provider institutions for these programs. Figure 2 is an analysis of the provider institutions.

Figure 2

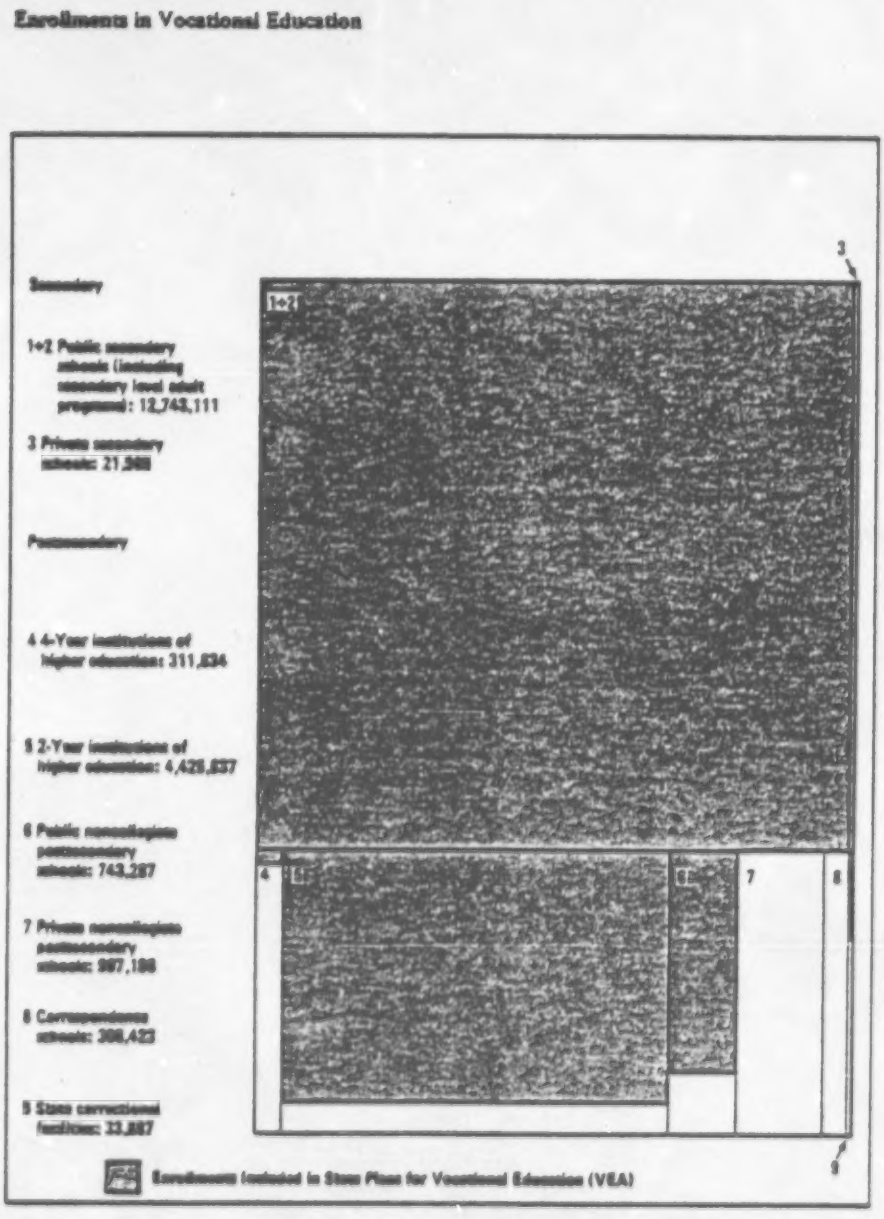
Providers of Vocational Education


Secondary
1 Public comprehensive and vocational high schools: 15,729
2 Public area vocational centers: 1,396
3 Private secondary schools: 588
Postsecondary
4 4-Year institutions of higher education: 847
5 2-Year institutions of higher education: 1,135
6 Public nondegree postsecondary schools: 812
7 Private nondegree postsecondary schools: 6,813
8 Correspondence schools: 83
9 State correctional facilities: 553
Providers included in State Plans for Vocational Education (VEA)

The secondary providers total 17,710, or 63.8 percent of the total providers. The post-secondary providers total is 10,043, or 36.2 percent.

Vocational education programs are traditionally grouped into nine program areas. An analysis of these occupationally specific programs is included in Figure 3.

Figure 3

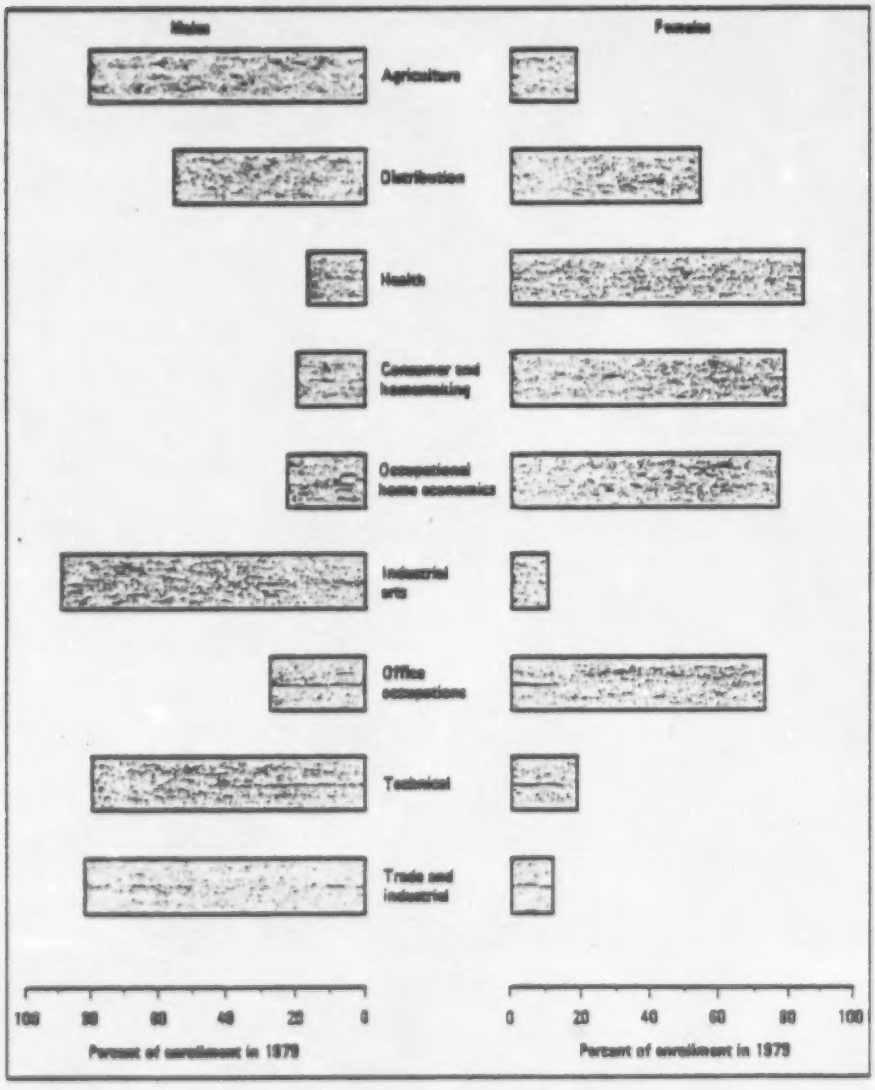


The occupationally specific enrollments total 7,625,937 or 44.7 percent of the total VEA enrollment of 17,033,620.

The distribution of enrollments in program areas by sex reveals considerable imbalance. Figure 4 is an analysis by program areas.

Figure 4

Sex Distribution of Vocational Students by Program Area



In summary, the purpose of vocational-technical education is to teach employment-related skills with a career focus. Vocational educators have devised approaches for defining occupational inventories, derived from survey data, and validation procedures which include interviews of on-the-job workers. Competency-based vocational education offers training programs in which performance objectives are used to specify the functional skills that are required for jobs in the world of work. These programs are designed to train individuals to a minimum level of skill proficiency, thus meeting the standards an employer has set for hiring individuals in an occupational area.

Appendix II

Alterationist
Auto Body
Auto Mechanics
Auto Parts Clerk
Bank Teller
Bookkeeper
Carpenter
Cashier/Checker
Child Care
Combination Welder
Computer Programmer
Cosmetologist
Cotton Ginning
Data Processing
Dental Assistant
Emergency Med. Technician
Floriculture
Food Services
Gardening-Grounds
Home Furnishing
Hospital Ward Clerk
Hotel/Motel Management
Housing Manager
Industrial Sewing
Legal Secretary
Lic. Practical Nurse
Machine Shop
Masonry
Nurseryman
Nursing Assistant
Plumbing
Printing Occupations
Radio/TV Services
Secretary
Ship Operations
Small Engine Repair
Tax Collector
Textile Production
Timber Harvesting
Tractor Mechanics
Turf Management
Word Processing/
Correspondence Specialist

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OCCUPATION: WORD PROCESSING/CORRESPONDENCE SPECIALIST

DUTY: Supervising and Implementing

TASK: Demonstrate Equipment Use

Performance Objective

Given a piece of equipment, its operations manual, and participants to view the demonstration; demonstrate the use of the equipment so that each feature of the equipment is demonstrated in accordance with operation manual instructions and so that no safety regulations are violated.

Performance Guide

1. Review the operations manual.
2. Test run equipment.
3. Determine appropriate time and location for demonstration and notify participants.
4. Assemble required equipment, materials and supplies.
5. Name the parts of the equipment for the participants.
6. Demonstrate the safe use of each feature.
7. Discuss safety precautions pertaining to normal operating procedures.
8. Demonstrate the complete sequence of steps in performance of typical operations.
9. Discuss the use of the operation manual for unusual procedures or troubleshooting strategies.
10. Answer any questions.

OCCUPATION: WORD PROCESSING/CORRESPONDENCE SPECIALIST

DUTY: Performing Clerical Activities

TASK: Establish Alphabetical Filing System

Performance Objective

Given materials classified as to subject/name, manila folders, labels, A-Z file guides, a typewriter and a file drawer; establish an alphabetical filing system. The subject/name will be placed on each label and the folders will be placed in the drawer behind the appropriate file guide.

Performance Guide

1. Assemble items to be filed.
2. Review documents.
3. Label manila folders as to subject name.
4. Insert A-Z file guides in file drawer.
5. File folders alphabetically.

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Appendix III

ILLUSTRATIONS OF CYEP COMPETENCY AREAS, COMPETENCY INDICATORS ASSESSMENT METHODS AND BENCHMARKS

COMPETENCY AREA	COMPETENCY INDICATOR	ASSESSMENT	BENCHMARK(S)
Pre-Employment	Knowledge of work oriented abilities, interests, values, and characteristics	Assessment tests, diagnostic tests, exercises	Complete (accurate) self-assessment ranking from most to least those characteristics that are occupationally relevant
Work Maturity	Ability to carry out instructions	Supervisor's monthly report	Participant will carry out instructions in an expeditious manner
Educational Skills	Word usage	Weekly testing	Participant will be able to demonstrate the ability to: determine singular and plural nouns; identify double negatives; correctly use synonyms and antonyms; correctly form and use possessives in both nouns and pronouns
Occupational Skills (TV Installer)	Mathematics for cable TV	Written test	Student will answer, with 70 percent accuracy, a test which includes mathematical computations performed as a cable TV installation technician

Appendix IV

Sample Benchmarks for VEDP Participant Assessment

The St. Louis University Center for Urban Programs was contracted by the Office of Community Youth Employment Programs to conduct an assessment of the Vocational Exploration Demonstration Project (VEDP). One of several products developed by the Center for Urban Programs is a benchmark assessment manual which defines the purpose of each particular benchmark, describes the procedure for assessing the achievement of that benchmark and outlines the procedure for recording the achievement. Appendix IV provides some sample benchmarks for selected competency indicators.

Competency Area	Competency Indicator	Assessment	Benchmarks
Pre-employment	Interviewing skills	After receiving X hours of instruction in employment interviewing techniques, the participant will go through a mock interview.	• Was well-groomed • Was well-dressed • Began interview with friendly greeting • Asked open-ended questions • Asked unbiased questions • Asked appropriate an relevant questions about duties and responsibilities • Listened attentively to responses • Maintained good eye contact
Pre-employment	Ability to obtain information about selected occupations	After receiving X hours of instruction in job search techniques, participant will demonstrate job search skills by researching employment potential in three occupations and completing all of the tasks assigned by the instructor.	• Identified a specific career field based on results of a job-related interest inventory • Identified three occupations located in the above field • Identified the responsibilities and duties of the three occupations

Competency Area	Competency Indicator	Assessment	Benchmarks
			• Completed a self-assessment of employment-related personal strengths and weaknesses • Developed a list of questions to ask an employer • Obtained from one employer a description of the training experience, responsibilities and duties of one of the occupations
Pre-employment	Ability to complete a job application	After receiving X hours of instruction in completing a job application, participant will complete a written application form with 100% accuracy.	• Information has been placed on correct lines • All information items have been completed • All words are spelled correctly • Application is filled out neatly
Work maturity	Attendance	After receiving written instruction regarding attendance on the job, participant performance will be evaluated by work-site supervisor.	• Has been in attendance 100% of the time • Has been on time 100% of the days
Work maturity	Work-relevant behavior	After receiving written instruction regarding appropriate behavior on the job, participant performance will be evaluated by work-site supervisor.	• Has completed assigned tasks on a timely basis • Has responded to assigned tasks in a proper manner • Has accurately completed assigned tasks • Has avoided inappropriate behavior as defined by policies • Has maintained appropriate interactions in interpersonal situations